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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/680,122	10/08/2003	Sergio Parolari	2001P83138WOUS	4673

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EXAMINER	
TORRES, JUAN A	

ART UNIT	PAPER NUMBER
2611	

DATE MAILED: 11/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/680,122	PAROLARI, SERGIO	
	Examiner	Art Unit	
	Juan A. Torres	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-3,5,6 and 23* is/are allowed.

6)☒ Claim(s) *4,7,9-15 and 18-22* is/are rejected.

7)☒ Claim(s) *8,16 and 17* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 October 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3-8-2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

The drawings are objected to because: Figures 1, 2, 3a, 3b and 4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g) (see specification page 2 line 1 to page 4 line 28; and page 24 lines 24-26). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because exceed 150 words.

Correction is required. See MPEP § 608.01(b).

The disclosure is objected to because of the following informalities:

a) The recitation in page 21 line 32 “network, as indicated in claim 1” is improper because claims can change numbering and/or claimed subject of matter during the prosecution of the case; it is suggested to be changed to “network”.

b) The recitation in page 22 line 12 “50 Km/h” is improper because the symbol to represent thousands is a lower case k; it is suggested to be changed to “50 km/h” (emphasis added).

c) The recitation in page 26 lines 9-14 “This algorithm acts on a sequentially built-up trellis having as many nodes (reiterated at each symbol time T) as the states S=ML of the receiver, corresponding to all the possible combinations generated from M words (symbols)) of a modulation alphabet over L symbol times (where L is the significant

length of the initially estimated channel pulse response). Starting from" is improper because is not properly constructed; it is suggested to be changed to "This algorithm acts on a sequentially built-up trellis having as many nodes (reiterated at each symbol time T) as the states S=ML of the receiver, corresponding to all the possible combinations generated from M words (symbols) of a modulation alphabet over L symbol times (where L is the significant length of the initially estimated channel pulse response). Starting from" (emphasis added).

d) The recitation in page 31 line 33 "Figur s 7 and 8" is improper because is not properly constructed; it is suggested to be changed to "Figures 7 and 8".

e) The recitation in page 32 line 3 "50 Km/h" is improper because the symbol to represent thousands is a lower case k; it is suggested to be changed to "50 km/h" (emphasis added).

f) The recitation in page 33 line 8 "TLLI" is improper because this term has not been introduced previously; it is suggested to be changed to "Temporary Logical Link Identity (TLLI)".

g) The recitation in page 34 line 29 "Affirmative answer in step S4 enters step S6" is improper (see figure 15); it is suggested to be changed to "Affirmative answer in step S5 enters step S6".

h) The recitation in page 35 line 1 "Negative answer in step S4 enters step S6' " is improper (see figure 15); it is suggested to be changed to "Negative answer in step S5 enters step S6' ".

i) Tables 1, 2, 3 and 4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g) (see specification page 2 line 1 to page 4 line 28; and page 24 lines 24-26).

Appropriate correction is required.

The use of the trademarks "ERICSSON" and "MOTOROLLA Inc." has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

Claims 8 and 14-17 are objected to because of the following informalities:

As per claim 8, the recitation in line 4 of claim 8 "if" is improper because the use the word "if" render the claim indefiniteness; it is clear what it happens if the condition is met, but if that condition is not met is indefinite. It is suggested to change the word "if" to "when".

As per claims 16 and 17, they are objected because they depend directly or indirectly from claim 8, and claim 8 is objected.

As per claim 14, the recitation in lines 8, 9 and 10 of claim 14 "if" is improper because the use the word "if" render the claim indefiniteness; it is clear what it happens if the condition is met, but if that condition is not met is indefinite. It is suggested to change the word "if" to "when".

As per claim 15, it is objected because they depend directly from claim 14, and claim 14 is objected.

As per claim 15, the recitation in line 7 of claim 15 "if" is improper because the use the word "if" render the claim indefiniteness; it is clear what it happens if the condition is met, but if that condition is not met is indefinite. It is suggested to change the word "if" to "when".

As per claim 15, the recitation in lines 1-2 of claim 15 "Method for dynamically optimizing data throughput according to the preceding claim" is improper because the claims can change the numbering and/or the dependency during the prosecution of the case, and the recitation preceding claim may be indefinite; It is suggested to be changed to "Method for dynamically optimizing data throughput according to claim 14".

As per claim 15, the recitation in line 7 of claim 15 "RLC" is improper because the term RLC has not been introduced previously; It is suggested to be changed to "Radio Link Control (RLC)".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 4 recites the limitation "obtaining for each MCS fourth upgrade and/or downgrade tabulated BLER thresholds (D)" in lines 2-3 of claim 4. There is insufficient antecedent basis for this limitation in the claim, because claim 1, from which claim 4 depends, only discloses two thresholds A, and B, so it is indefinite to disclose a fourth threshold when a third threshold has not been disclosed.

Examiner NOTE: It seems that claim 4 has a problem of dependency, and claim 4 should depend from claim 3 instead of claim 1.

Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 7 recites the limitation "that for each MCS a linear interpolation is performed run-time between second (B) and fourth (D) upgrade threshold and/or between second (B) and fourth (D) downgrade threshold, using the IR_status as interpolating factor for unbalancing the entity of the interpolation either towards fourth thresholds (D) when incremental redundancy prevails, or towards second thresholds (B) on the contrary case" (emphasis added) in lines 2-6 of claim 7. There is insufficient antecedent basis for this limitation in the claim, because claim 3, from which claim 7 indirectly depends, only discloses tree thresholds A, B and C.

Examiner NOTE: It seems that claim 5 has a problem of dependency, and claim 5 should depend from claim 4 instead of claim 3 (supposing that claim 4 will depend form claim 3, see above).

Claims 9-15 and 19-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 9, claim 9 recites the limitation "Method for dynamically optimizing data throughput according to claim 1, preceding claims characterized" (emphasis added) in lines 1-2 of claim 9. It is no clear what it is trying to claim.

As per claims 10-15 and 19-22 they are rejected because they depend directly or indirectly from claim 9, and claim 9 is rejected.

Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 18 recites the limitation "upgrade third (C) or fourth (D) tabulated threshold" in line 9 of claim 18. There is insufficient antecedent basis for this limitation in the claim, because claim 3, from which claim 18 indirectly depends, only discloses three thresholds A, B and C.

Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 18 recites the limitation "downgrade third (C) or fourth (D) tabulated threshold" in line 11 of claim 18. There is insufficient antecedent basis for this limitation in the claim, because claim 3, from which claim 18 indirectly depends, only discloses three thresholds A, B and C.

Claim 22 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention. Claim 22 recites the limitation " where: R_k takes a formal expression as that used in the BLER calculation, and β is the same" in lines 6-7 of claim 22. It is no clear what tit is trying to claim, because it is not understood what R_k, and β are.

Allowable Subject Matter

Claims 1, 2, 3, 5, 6 and 23 allowed.

The following is a statement of reasons for the indication of allowable subject matter: claims 1, 2, 3, 5, 6 and 23 are allowed because the references cited fail to teach, as applicant has, a method for dynamically optimize data throughput at the radio interfaces of a packet data cellular network having at disposal of said interfaces one or more type of modulations having different immunity from transmission errors when used for transmitting bursts of data, packed-up in blocks, between mobile stations (MS) and the serving base station (BTS), and vice versa, obtaining for each available modulation an upgrade and/or a downgrade tabulated threshold of the Block Error Rate, or BLER, delimiting a range in which that modulation outperforms the other available modulations in term of net data throughput; the BLER on the relevant temporary connection being continuously averaged and compared with the tabulated thresholds for selecting the proper modulation characterized in that includes the steps of combining each available modulation with two or more coding schemes obtaining as many modulation-and-coding schemes, termed hereinafter MCSs, with different protection against transmission errors; obtaining for each MCS a first upgrade and/or a first downgrade tabulated BLER threshold (A) valid for low-diversity RF channels, delimiting a range in which that MCS

outperforms the other available MCSs in term of net data throughput, considering as low-diversity a channel without frequency hopping and with low user mobility; obtaining for each MCS a second upgrade and/or a second downgrade tabulated BLER threshold (B) valid for high-diversity RF channels, delimiting a range in which that MCS outperforms the other available MCSs in term of net data throughput, considering as high-diversity a channel characterized by frequency hopping or high user mobility; selecting either the first (A) or the second (B) tabulated thresholds according to the diversity of the RF channel which sustains the temporary connection and use the selected thresholds for discriminating the right MCS, as the applicant has claimed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Schramm (US 6208663 B1) discloses error handling using automatic retransmission requests (ARQ) in digital communication systems that support multiple FEC coding and/or modulation schemes. Balachandran (US 20020036992 A1) discloses adapting the size and coding of packets in order to reduce over-all delay when communicating data over the wireless links. Chuang (US 6823005 B1) discloses dynamic link adaptation process that offers increased throughput and bandwidth allocation efficiency with particular benefit for wireless data services. Eriksson (US

6865233 B1) discloses signaling involving multiple modulation and coding schemes, link adaptation and incremental redundancy in digital communication systems.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juan A. Torres whose telephone number is (571) 272-3119. The examiner can normally be reached on Monday-Friday 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad H. Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Juan Alberto Torres
11-02-2006

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